

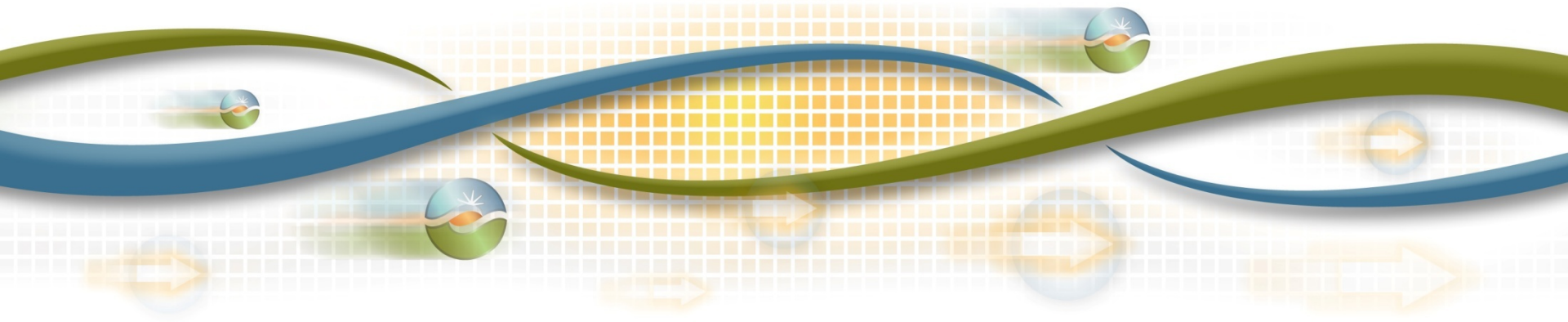
Partnering to develop a roadmap to advance energy storage in California

CEC Staff Workshop - An Exploration of Advancements in Energy Storage in California since the American Recovery and Reinvestment Act

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Heather Sanders, Director, Regulatory Affairs, Distributed Energy Resources



Energy storage is one of several options available to provide operational flexibility and mitigate renewable curtailment.

- Increase **energy storage**, demand response, and energy efficiency
- Modify curtailment provisions in power purchase agreements to reconcile with RPS priorities
- Achieve time-of-use rates or other mechanism to align with regional and seasonal system conditions
- Deepen regional coordination with other balancing authorities
- Electrify transportation including managed charging capabilities and incentives
- Reduce fleet minimum load burden by increasing fleet flexibility

The Energy Storage Roadmap is a partnership between the California ISO, California Energy Commission, and the California Public Utilities Commission.

- The objective is to understand needed policy and regulatory actions to facilitate expansion of energy storage in California. The roadmap will:
 - capture from stakeholders, barriers for specific energy storage configurations and use cases;
 - prioritize these barriers; and
 - identify appropriate venue(s) to address them.
- The roadmap effort will serve to enhance understanding of challenges and barriers for energy storage and as a guide for future efforts but is not the forum to address identified barriers.

Stakeholders provided input on barriers and needed actions to drive the roadmap content planned for publication in December.

Products and services



Revenue

- Financial barriers
- Ancillary Service barriers

Defining and communicating grid needs as well as existing capabilities will clarify gaps and help identify new products.

Rules and requirements



Costs

- Market and Regulatory barriers
- Standards barriers
- Metering barriers
- Telemetry barriers
- Interconnection barriers
- Modeling Barriers

Reviewing metering and telemetry requirements, investigating alternatives, and reviewing standards will facilitate cost reduction.

Complexity and uncertainty



Time

Clarifying distribution interconnection processes and relationship to wholesale market participation will lead to better predictability and transparency.



Thank you

Heather Sanders

(916) 608-5850

hsanders@caiso.com

